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EXAMINER
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HOFFMAN, BRANDON S

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TOMAS NORDSTROM, GUNNAR BAHLENBERG, DANIEL  
BENGTSSON, SIWERT HAKANSSON, ANDERS ISAKSSON, MIKAEL  
ISAKSSON, MAGNUS JOHANSSON, LIS-MARIE LJUNGGREN, HANS  
LUNDBERG, SVEN-RUNE OLOFSSON, LENNART OLSSON, TOMAS  
STEFANSSON, HANS OHMAN, and GORAN OKVIST

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Appeal 2008-3456  
Application 09/555,816<sup>1</sup>  
Technology Center 2400

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Decided<sup>2</sup>: May 21, 2009

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*Before* JOHN C. MARTIN, JAY P. LUCAS, and THU A. DANG,  
*Administrative Patent Judges.*

LUCAS, *Administrative Patent Judge.*

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<sup>1</sup> Application filed October 10, 2000. Application 09/555,816 is a U.S. National Stage entry of PCT/SE98/02193, filed December 1, 1998. Priority is claimed to Swedish application 9704497-8 filed December 3, 1997. The real party in interest is STMicroelectronics S.r.l.

<sup>2</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

## DECISION ON APPEAL

### STATEMENT OF THE CASE

Appellants appeal from a twice rejection of claims 24-46 under authority of 35 U.S.C. § 134(a). The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b). Claims 1-23 are canceled.

Appellants' invention relates to a device for manipulating digital data before transmitting the message via a telecommunications network. In the words of the Appellants:

In the data scrambler of the present invention, user data bits are combined with the known synchronization frame data, typically the two most significant bits, using an exclusive-OR function. This results in a statistically and computationally efficient scrambling of the user data.

The present invention results in a much improved statistical distribution of modulated sub-carriers, in a multi-carrier transmission system, compared to the case where no scrambling is used for correlated, or null data situations.

(App. Br. 4, middle).<sup>3</sup>

Claims 24 and 27 are exemplary:

24. A data scrambler, for use in a multi-carrier transmission system in which synchronization frame data is periodically transmitted from a transmitter to a receiver to measure transmission

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<sup>3</sup> All citations herein to the Appeal Brief are to the Supplemental Appeal Brief filed on June 11, 2007.

channel characteristics, the data scrambler comprising a combiner unit to combine user data with frame synchronization data.

27. A data scrambler as claimed in Claim 24, wherein the combiner unit combines the user data with the two most significant bits of a synchronization frame of the frame synchronization data.

### PRIOR ART

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Kloker	US 4,539,684	Sep. 3, 1985 (filed Jan. 7, 1983)
Frederiksen	US 4,742,543	May 3, 1988
Ueda	US 6,289,102 B1	Sep. 11, 2001 (filed Oct. 1, 1997)
Isaksson	WO 95/03656	Feb. 2, 1995

### REJECTION

Claims 24-46 stand rejected under 35 U.S.C. § 103(a) for being obvious over Kloker in view of Isaksson.

Appellants contend that the claimed subject matter is not rendered obvious by Kloker in combination with Isaksson for failure of the references to render the claims obvious. The Examiner contends that each of the claims is properly rejected.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this opinion. Arguments that Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).<sup>4</sup>

We affirm the rejection.

#### ISSUE

The issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. § 103(a). The issue turns on whether the Kloker reference discloses the claimed data descrambler and combiner unit “for use in a multi-carrier transmission system” (claim 24).

#### FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. Appellants have invented a data scrambler and a combiner unit that can combine user data with frame synchronization data. (Spec. 2, ll. 9-13).

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<sup>4</sup> Appellants have not presented any substantive arguments directed separately to the patentability of the dependent claims or related claims in each group, except as will be noted in this opinion. In the absence of a separate argument with respect to those claims, they stand or fall with the representative independent claim. *See In re Young*, 927 F.2d 588, 590 (Fed. Cir. 1991).

In one embodiment, the combiner unit combines the user data with the two most significant bits of a synchronization frame of the frame synchronization data. (Spec. 2, ll. 4-6). The combiner unit may comprise an exclusive OR (XOR) combiner unit. (*Id.*)

2. The Kloker reference discloses an adder that combines user input data with autosynchronization sequence data before the combined message is transmitted. (*See* Kloker, Fig. 3, col. 3, l. 57 to col. 4, l. 3). The adder scrambles the user input data with autosynchronization sequence data. (*See id.*, Fig. 3, col. 3, ll. 64-65). The adder is typically an exclusive OR (XOR) logic gate. (*Id.*)
3. Two references disclose using exclusive OR (XOR) logic gates to scramble the two most significant bits of digital messages. (*See* Ans. 8, bottom; Ueda, Fig. 12, col. 16, ll. 3-22; Frederiksen, col. 17, ll. 8-21).

#### PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's

endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *In re Deminski*, 796 F.2d 436, 442 (Fed. Cir. 1986); *see also In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979) and *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain. *In re Lemelson*, 397 F.2d 1006, 1009 (CCPA 1968) (citing *In re Boe*, 355 F.2d 961, 965 (CCPA 1966)).

“[A]ny need or problem known in the field and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. at 402.

In sustaining a multiple reference rejection under 35 U.S.C. § 103(a), the Board may rely on one reference alone without designating it as a new ground of rejection. *In re Bush*, 296 F.2d 491, 496 (CCPA 1961); *In re Boyer*, 363 F.2d 455, 458 n.2 (CCPA 1966).

The “intended use” of a machine is not germane to the issue of patentability of the machine itself. *In re Casey*, 370 F.2d 576, 580 (CCPA 1967).

“It is not the function of [the U.S. Court of Appeals for the Federal Circuit] to examine the claims in greater detail than argued by an appellant, looking for nonobvious distinctions over the prior art.” *In re Baxter Travenol Labs.*, 952 F.2d 388, 391 (Fed. Cir. 1991). Similarly, it is not the function of this Board to examine claims in greater detail than argued by an Appellant, looking for distinctions over the prior art.

## ANALYSIS

From our review of the administrative record and for the reasons given below, we conclude that Appellants have not shown error in the Examiner's prima facie case for the rejection of Appellants' claims under 35 U.S.C. § 103(a). The Examiner's explanation of the prima facie case for obviousness is presented on pages 3 to 5 of the Examiner's Answer. In opposition, Appellants present several arguments.

Appellants contend that Kloker fails to teach a data scrambler, and even if Kloker does teach a data scrambler, the data scrambler is not for use in a multi-carrier transmission system.

Concerning these two intertwined arguments, Appellants express their contention as follows:

[T]here is nothing in Kloker that teaches or suggests that such a bit stream reducing process would be desirable in a data scrambler or descrambler of a multi-carrier transmission system using, for example, DMT, or OFDM.

(App. Br. 7, middle).

First, the Examiner points out in the Examiner's Answer that Kloker discloses or suggests a data scrambler in Figure 3 and in column 3, line 57 through column 4, line 46. (Ans. 3). Kloker discloses an adder that combines user input data with autosynchronization sequence data before the combined message is transmitted. (FF #2). We agree with the Examiner's analysis, in that a person of ordinary skill in the art would have understood Kloker's "input data sequence" to be the same as or obviously similar to Appellants' claimed "user data." Moreover, we see no error in equating



Kloker's autosynchronization sequence data with the claimed "known data." We decline to find error in equating Kloker's adder (28) with Appellants' claimed combiner unit. (*See* Ans. 3, middle). The adder as disclosed in Kloker is responsible for combining the input data sequence (Appellants' "user data") with autosynchronization sequence data (Appellants' "frame synchronization data") in a device called an encoder. (*See* Kloker, col. 3, ll. 57-64). Accordingly, Kloker's encoder is merely the claimed "data scrambler" by another name.

Second, we give no patentable weight to the language "for use in a multi-carrier transmission system in which synchronization frame data is periodically transmitted from a transmitter to a receiver to measure transmission channel characteristics" as recited in claim 24. Appellants' use of the phrase "for use in" as recited in claim 24 is an invitation for us to construe the language that follows the phrase as merely an intended use of the device. (*See In re Casey*, 370 F.2d at 580). However, for what usage the data scrambler is intended is not germane to the patentability of the data scrambler itself. (*Id.*) Thus, in excluding the intended use language, we read the claim as merely reciting a data scrambler and a combiner unit that combines user data and frame synchronization data. In other words, read in view of the authorities on intended use, we will not limit exemplary claim 24 to a multi-carrier transmission system. (*Id.*)

Despite Isaksson's disclosure of frame synchronization in a multi-carrier transmission system, we concentrate on Kloker for the operative elements of the claim. (*See In re Bush*, 296 F.2d at 496). We find that Appellants' claimed data scrambler and combiner unit, which combines user

data and frame synchronization data, read on the elements of Kloker's encoder. Isaksson is presented to teach transmission in the environment of a multi-carrier transmission system. Accordingly, Appellants' first two arguments are not persuasive.

Appellants further contend that the Examiner uses impermissible hindsight reasoning.

Concerning the argument, Appellants express their contention as follows:

[T]here is no discussion of any need, desire or problem whatsoever associated with an uncorrelated data stream for transmission.

As such, Appellants maintain that the Examiner is impermissibly using the teachings of Appellants' own patent application as a roadmap to modify the prior art.

(App. Br. 7-8).

We find that Kloker is in the same field of endeavor as the claimed invention. That is, the relevant art for both Kloker and the claimed invention is digital data transmission in a telecommunications networks. Contrary to the thrust of Appellants' argument above, the use of patents as references is not limited to the problems with which the patents are concerned. (*In re Lemelson*, 397 F.2d at 1009). Any need or problem known in the field and addressed by Kloker can provide a reason for combining the elements in the manner claimed. (*See KSR*, 550 U.S. at 402.)

Thus, a person of ordinary skill in the art would have had a reason to consider Kloker simply because it discloses an adder that combines user

input data with autosynchronization sequence data before the combined message is transmitted. (FF #2). Kloker's elements are the same as or obviously similar to those disclosed in the claimed invention. What is more is that Kloker's elements perform a scrambling function similar to the way the claimed data scrambler works. That Appellants regard Kloker as resolving a different problem in the art is immaterial. (*In re Deminski*, 796 F.2d at 442). Accordingly, Appellants' argument is unpersuasive.

Appellants' next argument is directed to claims 27, 31, 40, and 44. Claim 27 is exemplary.

Concerning this next argument, Appellants express their contention as follows:

[I]t was the Appellants that discovered that [when "the combiner unit combines the user data with the two most significant bits of a synchronization frame of the frame synchronization data,"] this results in a statistically and computationally efficient scrambling of the user data.

(App. Br. 8, bottom) (underlining omitted).

The Examiner points out in the Examiner's Answer that two references pre-dating the claimed invention disclose scrambling the two most significant bits. (FF #3). Appellants' Reply Brief fails to present effective arguments to counter the findings the Examiner sets forth in the Answer. (*See In re Baxter Travenol Labs.*, 952 F.2d at 391). Accordingly, we find no error in the Examiner's logic.

Appellants' final contention is that the Examiner impermissibly took Official Notice with regard to exemplary claim 27.

Appellants express their contention as follows:

[I]t was the Appellants that discovered that [when “the combiner unit combines the user data with the two most significant bits of a synchronization frame of the frame synchronization data,”] this results in a statistically and computationally efficient scrambling of the user data.

(App. Br. 8, bottom) (underlining omitted).

The Examiner has not provided any evidentiary support of a combiner unit of a data scrambler or descrambler combining the two most significant bits of the frame synchronization data with user data.

(*Id.* at 10, top).

The Examiner bolsters his argument in the Answer with multiple references that disclose the scrambling of the two most significant bits. (*See* Ans. 8, bottom). Appellants have not presented any counterarguments to this evidence. (*See In re Baxter Travenol Labs.*, 952 F.2d at 391). Thus, we find no merit in Appellants’ argument to reverse the rejection.

Appellants contend that the Examiner erred in rejecting claims 24-46 under 35 U.S.C. § 103(a). Upon reviewing the findings of facts cited above, we find no error in the Examiner’s analysis.

#### CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that the Examiner did not err in rejecting claims 24-46.

#### DECISION

We affirm the Examiner’s rejection of claims 24-46.

Appeal 2008-3456  
Application 09/555,816

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

msc

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